## **AMENDMENTS TO THE CLAIMS**

- 1-8. (Cancelled).
- 9. (Currently Amended) A method for reconfiguring a telecommunications transport network after addition or removal of a network resource, the method comprising: identifying a series sequence of single circuit movements to re-route a network from a set of n actual circuits CA<sub>i</sub> (i=1, ..., n), each satisfying a corresponding demand R<sub>i</sub> to a set of feasible intermediate circuits CI<sub>i</sub> which continue to satisfy the demands R<sub>i</sub> and which best approximate a series of target circuits CT<sub>i</sub>, comprising:
  - (a) initializing, at a network simulator, the circuit set CI to CA;
  - (b) for each demand R<sub>i</sub> still to be processed
    - (i) calculating, at the network simulator, one or more candidate replacement circuits

      Cl<sub>i</sub>, each candidate replacement circuit Cl<sub>i</sub> satisfying the demand R<sub>i</sub> and having a lower cost difference with respect to the corresponding target circuit CT<sub>i</sub> than the current circuit Cl<sub>i</sub> satisfying the demand R<sub>i</sub>;
    - (ii) replacing, at the network simulator, the current circuit Cl<sub>i</sub> with the candidate replacement circuit Cl<sub>i</sub> having the least cost difference; and
    - (iii) marking, at the network simulator, the demand Ri as having been processed; and
  - (c) identifying, at the network simulator, the sequence of single circuit movements with which circuits Cl<sub>i</sub> were replaced as the series of single circuit movements to re-route the network.

- 10. (Previously Presented) The method of claim 9 wherein each circuit comprises one or more legs connecting two or more nodes, and wherein calculating the cost difference of a candidate replacement circuit CI<sub>i</sub> with respect to the corresponding target circuit CT<sub>i</sub> comprises summing the costs of the legs of the circuit CI<sub>i</sub> that do not overlap with the legs of the target circuit CT<sub>i</sub>.
- 11. (Previously Presented) The method of claim 10 wherein calculating the cost difference further comprises excluding a cost associated with an unused leg of the target circuit CT<sub>i</sub>.
- 12. (Previously Presented) The method of claim 9 wherein the cost of a circuit is the sum of the cost of each circuit leg.
- 13. (Previously Presented) The method of claim 9 further comprising, after processing all demands R<sub>i</sub>, determining whether to take the sequence with which circuits CI<sub>i</sub> have been replaced as the series of single circuit movements to re-route the network, or whether to repeat step (b) using the current set of feasible intermediate circuits CI<sub>i</sub>.
- 14. (Previously Presented) The method of claim 13 wherein the determination is made based on the overall difference in cost between the CA circuits and the CI circuits.
- 15. (Previously Presented) The method of claim 13 wherein the determination is made based on the overall difference in cost between the CI circuits and the CT circuits.
- 16. (Previously Presented) The method of claim 9 further comprising providing the identified sequence of single circuit movements to a network manager for implementation on the network.

- 17. (Previously Presented) The method of claim 16 further comprising performing the identified sequence of single circuit movements on a network by the network manager.
- 18. (Currently Amended) A telecommunications transport network comprising:
  a plurality of circuits that satisfy a corresponding plurality of demands R; and
  a network simulator operative to reconfigure the telecommunications transport network after
  addition or removal of a network resource by identifying a series sequence of single
  circuit movements to re-route the network by:
  - (a) initializing a circuit set CI to CA, wherein CA comprises a set of n actual circuits CA<sub>i</sub> (i=1, ..., n), each satisfying a corresponding demand R<sub>i</sub>, and wherein CI comprises a set of feasible intermediate circuits CI<sub>i</sub> which continue to satisfy the demands R<sub>i</sub> and which best approximate a series of target circuits CT<sub>i</sub>;
  - (b) for each demand R<sub>i</sub> still to be processed
    - (i) calculating one or more candidate replacement circuits Cl<sub>i</sub>, each candidate replacement circuit Cl<sub>i</sub> satisfying the demand R<sub>i</sub> and having a lower cost difference with respect to the corresponding target circuit CT<sub>i</sub> than the current circuit Cl<sub>i</sub> satisfying the demand R<sub>i</sub>;
    - (ii) replacing the current circuit Cl<sub>i</sub> with the candidate replacement circuit Cl<sub>i</sub> having the least cost difference; and
    - (iii) marking the demand R<sub>i</sub> as having been processed; and
  - (c) identifying the sequence of single circuit movements with which circuits Cl<sub>i</sub> were replaced as the series of single circuit movements to re-route the network.